

# Committee on Resources

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## Environmental Significance of Oil and Gas Platforms in The Gulf of Mexico

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The Gulf of Mexico is home to ~4,000 oil and gas platforms. They produce one of the most prolific ecosystems, by area, on the planet. Stanley and Wilson (2000) reported that 10,000-30,000 fish reside around the platform in an area about half the size of a football field. Live rock organisms, coral, endangered species, and "protected" fish and invertebrates colonize the platform's submerged structure. Many blue-water platforms create complex coral reef ecosystems, comprised of Caribbean flora and fauna that would otherwise not exist on thousands of square miles of generally featureless and silty continental shelf.

The platforms clearly produce fish rather than merely attract fish. An abundance of evidence suggests that they are Essential Fish Habitat (EFH), Coral Habitat, and Endanger Species Habitat (ESH). Over 50 species of federally managed fish, crustaceans, and Live rock organisms settle and forage around the offshore structures. The ecosystems they create are not designated as "protected habitat" under any of our current Gulf of Mexico Fisheries Management Plans. Over 120 of them will be removed every year for the next 40 years.

Post larval and juvenile reef fish can be found in remarkable numbers foraging in the thick mats of live rock and coral that attach to the platform legs. Thousands of herbivores such as Angle fish, Blue Tang, Chubs, and Parrotfish feed on the algae that grow on the platforms. Plankton pickers such as Brown Chromas, Creol Wrasse, and Creolfish are continuously feeding on and off the platforms. The invertebrate community living on the platforms supports several species of Filefish, large schools of Spadefish, and a multitude of Sergeant Majors and Hogfish. Ultimately, the sharks, tuna, grouper, snapper, and jacks end up preying on the fish that live and feed on the platforms.

Photographic evidence demonstrates that >12 species of egg laying fish are utilizing platforms to raise their offspring. More remarkably, platforms are being utilized as surrogate nesting grounds for several species (>13) of drifting larvae. Broadcast spawners or pelagic spawners cast fertilize eggs to the current after mating. The offspring can drift for days, weeks, or even months in the larvae state. Coral reefs, and in some cases, sandy habitat trigger a sensory mechanism in the infant fish, that tells the fish to transform into a post-larvae state. Once currents guide the larvae to the platform, the presence sponges, hydroids, mollusks, and coral stimulate metamorphosis. After transformation, the post-larval fish must begin feeding or parish. The surface area of the sponges and other attached invertebrates is teaming with the essential food items for juvenal and post-larval fish, i.e. plankton, copepods, and amphipods.

Oil and gas platforms represent the only reef habitat over much of the Louisiana continental shelf. During the summer months, much of the ocean floor in the region is covered with an anoxic layer of decomposing algae resulting from excess nitrogen draining from agricultural fields along the Mississippi watershed. Petroleum structures are incredibly important to fish in the area in that they are only hard substrate that rises through the anoxic layer to provide reef habitat, food, spawning areas, nesting areas, and mating grounds. Obligatory reef fish spend their entire lives on the platforms in search of food, reproducing and competing for territory. .

### Critical Habitat on Texas-Louisiana Shelf

The platforms reside on thousands of sq miles of turbid ocean floor resulting from millions of year of sedimentation from the Mississippi and other tributaries. They provide reef fish in the region hard substrate and the necessary resources for survival.

### Critical Habitat on Texas-Louisiana Shelf

Many of the petroleum fields are reaching an unproductive state, ~2,000 platforms have been removed to

date. Over the next 40 years, 100-200 platforms will be removed annually. Every year, the oil and gas industry spends ~\$300 million to remove platforms. In 2003, >200 platforms will be removed, costing ~\$400 million. Thousands of fish die, millions of invertebrates perish, and a reef ecosystem is lost when a platform is removed. Man and marine life would mutually benefit by leaving the structures in place.